PROCEEDINGS OF LEARNED SOCIETIES.

ROYAL SOCIETY.

Feb. 22, 1849.—Read a paper, entitled "Description of an Infusory Animalcule allied to the genus Notommata of Ehrenberg, hitherto undescribed*." By John Dalrymple, Esq., F.R.C.S.

The examination of various specimens of the animalcule described by the author, disclosed the diœcious character of one of the more highly organized of the rotiferous class of Infusoria, hitherto supposed to be androgenous. This discovery was first made by observing the difference in the form and development of the embryo while still enclosed in the ovisac of the parent animal. From the extreme transparency of this form of rotifer, it is possible to trace the progressive development of the young from the Græffian vesicle in the ovary to the period of mature gestation, when the embryo is expelled, the whole machinery of whose organs has been perfected while still within the body of the female.

Thus, although the young one observed in the ovisac, when nearly ready to be expelled, was in the great majority of instances a miniature portrait of the parent, yet occasionally an embryo was seen of a different aspect, within whose body a vesicle was discovered filled with actively moving spermatozoa.

A further investigation of the subject brought clear evidence of the functions performed by this male,—its copulation with the young females; but it also displayed the singular fact, that although the organs of reproduction and locomotion were highly developed, there was a total absence of those of assimilation; in fact, that neither mouth, nor stomach, nor other digestive cavity or glands, were present in its curious organization.

In the early part of the paper the author describes the anatomy of the female, which differs from the family of Notommata of Ehrenberg, in the absence of intestine and anal orifice, and forcipated or caudal foot. In every other respect the organization is so similar to that class, that the author believes the proper place for this animalcule to be in a *sub-genus* of Notommata.

In relation to physiology, the author submits a new theory of the mechanism of circulation and respiration in the general group of Rotifers, a subject which is but obscurely treated of by the great German observer, who appears to have believed in the existence of tubular vessels or true vascular system. The author thinks, however, that these functions are performed in a manner more resembling that of insects, viz. that the blood is contained in the general cavity of the animal and circulates round the lung, which is here represented by a contractile vesicle that receives and expels the water in which the animalcule lives, and so comes to be in intermediate relation with the air mixed with the water. The difference therefore between the aëration of the blood of insects and that of this rotifer is rather due to the difference of the media they respectively inhabit, than of design. In both, the blood is contained in a general

* [A paper on this subject by Mr. J. Brightwell, illustrated with a plate, appeared in the 'Annals' for September 1848.—Ed. *Ann. Nat. Hist.*]

cavity and brought in contact with the air, without the intervention of any true vascular system.

The beautiful transparency of the animal, and the facility with which the development of the ovum may be traced through all its stages, induces the author to believe it to be well-suited to the inquiries of the embryologist and of those who devote themselves to the study of the metamorphosis of cell into tissue.

This animalcule has hitherto been discovered only in a few situations (in Norfolk near Norwich, and in Warwickshire near Coventry), but it is believed, from the very general dispersion of Infusoria, that it may be more extensively met with, especially in the months of June, July, August and beginning of September.

The author concludes by expressing his belief that re-examination of the whole order of Rotifera is necessary to determine the disposition of the sexes, and to assign them their proper situation in the scale of animated beings.

BOTANICAL SOCIETY OF EDINBURGH.

May 10, 1849.—Professor Balfour, President, in the Chair.

The following communications were read :—

1. "Description of *Monormia*, Berkeley," by G. H. K. Thwaites, Esq., communicated by John Ralphs, Esq. This genus is allied to *Trichormus*, Allman, differing principally, if not solely, in its definite, linear frond, which encloses a single moniliform filament to be traced throughout all the peculiar convolutions of the frond. The vesicular cells are interstitial, and occur singly. The sporangia are numerous, and are first formed from the cells at the greatest distance from the vesicular cells. Without due attention *Monormia* might easily be mistaken for a species of *Nostoc*; but the mass formed by its convoluted frond is not enclosed by a common membranous pellicle as in that genus.

Monormia intricata occurs in slightly brackish waters in floating gelatinous masses, each about as large as a walnut, and usually of a reddish brown colour.

The paper concluded with a synoptical table of the genera of *Nostochineæ*, and will appear in the 'Annals of Natural History' and the Society's Transactions.

2. "On the Causes which determine the Limits of the different species of Vegetables in the North of Europe," by Robert Huish, Esq., F.L.S., communicated by William Wallace Fyfe, Esq. In this communication Mr. Huish gave a condensed view of the researches of M. Alphonse DeCandolle in this interesting department of botanical science.

Dr. Balfour exhibited plants of the following interesting species from the Royal Botanic Garden, and made remarks upon them, viz.: *Trichopilia tortilis*; *Maxillaria Harrisonii*; *Oxalis bupleurifolia*, a shrubby species from Brazil; *Cereus crinitus*; *Pinguicula grandiflora*, distinguished by the large size of the flower, length of spur and continuity of the segments of the corolla; *Xylophylla latifolia*; *Persea*